



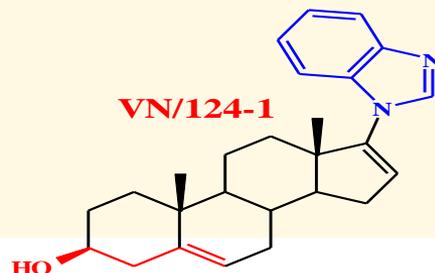
**MD State Council on Cancer Conference**  
**November 19, 2013**  
**Kevin J. Cullen, M.D.**

NCI·CC

A Cancer Center Designated by the National Cancer Institute

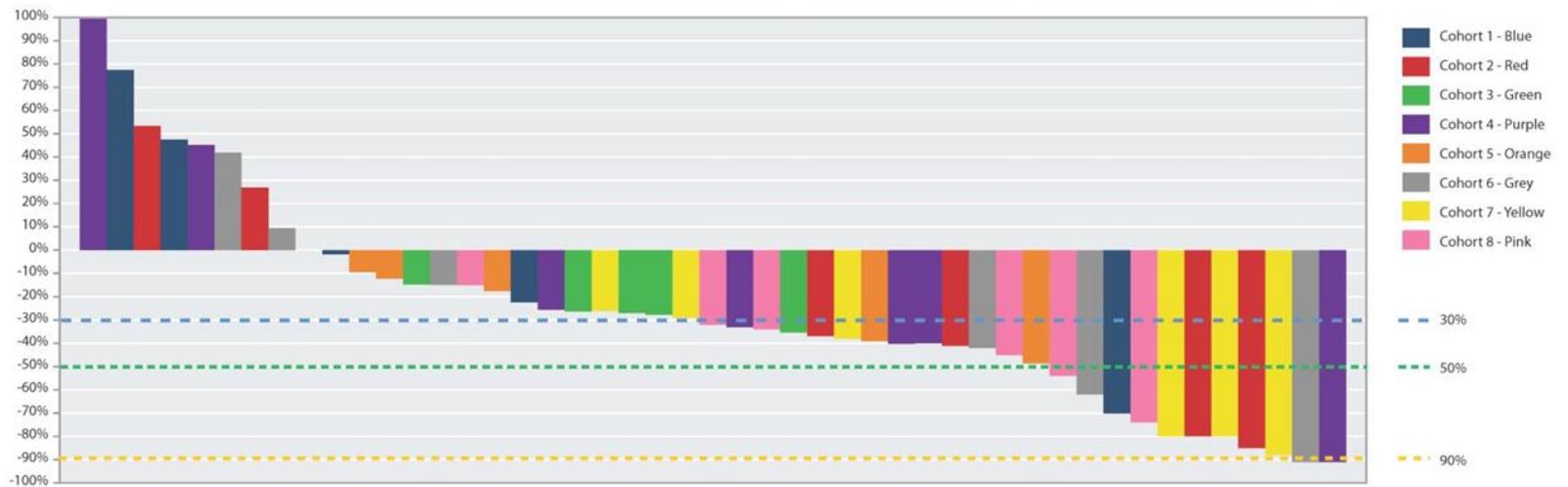
 UNIVERSITY of MARYLAND  
MARLENE AND STEWART GREENBAUM  
CANCER CENTER

# Galeterone



- Developed by Drs. Angela Brodie and Vincent Njar at University of Maryland Greenebaum Cancer Center
- Galeterone has three mechanisms of action in prostate cancer
  - Inhibits androgen biosynthesis
  - Inhibits androgen-androgen receptor interactions
  - Degrades androgen receptor, including androgen receptor isoforms that become activated in advanced disease
- Therefore, Galeterone has unique activities targeting survival pathways in advanced prostate cancer, and may have the potential to inhibit prostate cancer that has failed first and second line hormone therapies

**Figure 5.** Maximal PSA Response



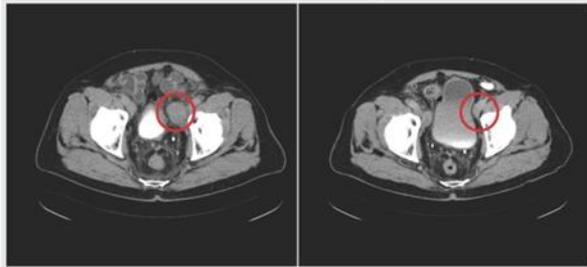
Montgomery et al  
ASCO 2012

## Tumor Response

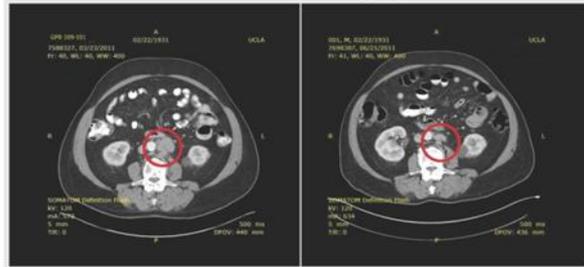
Reduction in tumor size was reported in 3 patients treated at high dose 1950 mg and 2600 mg galeterone (Figure 6).

**Figure 6.** Tumor Response (baseline and 3 months)

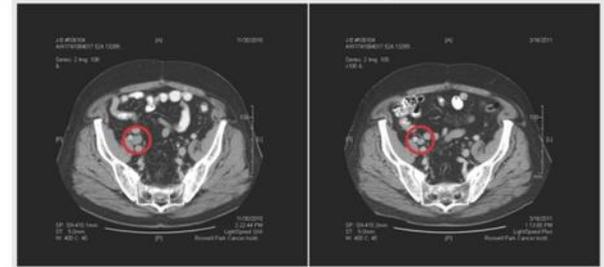
A. JAW 107-109 (2600 mg QD) CT Scan



B. GPB 109-101 (2600 mg split) CT Scan



C. J-B 106-104 (1950 mg split) CT Scan



Montgomery et al  
ASCO 2012

# ARMOR2 TRIAL

- Four Arm Trial Evaluating Activity of Galeterone in Advanced Castration Resistant Prostate Cancer (CRPC)
- The Four Groups of Patients Include:
  - M0 CRPC patients (non-metastatic, chemotherapy-naïve)
  - M1 CRPC patients (metastatic, abiraterone-naïve and chemotherapy-naïve)
  - M1 CRPC patients (metastatic, failed abiraterone but chemotherapy-naïve)
  - M1 CRPC patients (metastatic, failed chemotherapy and failed enzalutamide)

# Update: Population Research at UMGCC University of Maryland Cancer Epidemiology Alliance



William A. Blattner, MD  
Professor and Director  
Division of Cancer Epidemiology, DEPH  
University of Maryland  
Associate Director, Population Science, UMGCC

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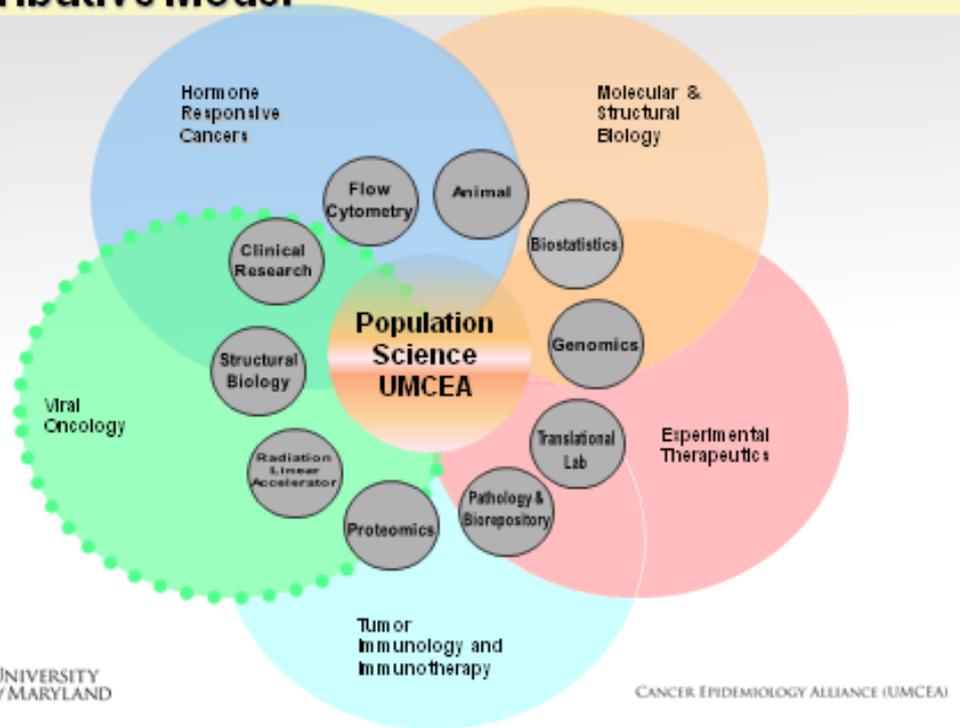
A Cancer Center Designated by the National Cancer Institute



# What is UMCEA?

University of Maryland Cancer Epidemiology Alliance (UMCEA) is the Population Research Activity of the UMGCC that bridges faculty from UMB and UMCP to promote research and education in cancer epidemiology and population research.

## UMCEA – Population Research Activity of GCC – Distributive Model



# UMCEA Objectives

- Promote collaboration between cancer population research in the SPH, UMCP and DEPH, UMB and the broader University community, as well as other institutions.
- Collaborate in joint research grant funding proposals engaging the complementary strengths of faculty.
- Develop co-curriculum in Cancer Epidemiology that engages faculty from both campuses
- Engage faculty from both campuses in graduate student and post-doctoral mentoring
- Serve as a resource to address the cancer burden of Marylanders in collaboration with DHMH.
- Develop Population Research Funding at UMGCC to support Comprehensive Cancer Center Status.

# Experimental Therapeutics: Active Grants

Title	Number	Grant Period	Total Budget
Standardization of Methods to Measure Waterpipe Smoke Emissions and Exposure- P. Clark	5 R01 CA133149-04-NCI	6/01/09-4/30/13	\$623,737
Rapid response human testing of smokeless tobacco products- P. Clark	1 R01 DA031142-01A1- NIDA	9/1/12-8/31/15	\$776,248
Abuse liability assessment and characterization of an electronic nicotine deliver- P. Clark	5 R21 DA030622-02-NIDA	8/15/11-6/30/13	\$184,011
Stage II Trial of Novel Behavioral Activation Intervention for Smoking Cessation- L. MacPherson	5 R01 DA018730-06-NIDA	7/1/10-5/31/14	\$373,247
Behavioral activation intervention, reward processing and youth smoking cessation- L. MacPherson	5 R21 DA029445-03-NIDA	5/10/10-4/30/13	\$217,455
MicroRNA As A Blood Analyte For Lung Cancer- F. Jiang	5013-MIPS	11/1/12-10/31/13	\$20,185

# Hormone Responsive Cancers: Active Grants

Title	Number	Grant Period	Total Budget
Prospective Study of Serum MIS and Gynecologic Cancer Risk- J Dorgan	3 R01 CA163018-02S1- NCI	9/17/13-6/30/14	\$124,545
Prospective Study of Serum MIS and Gynecologic Cancer Risk-J Dorgan	7 R01 CA163018-02- NCI	9/16/13-6/30/15	\$437,025
Adolescent Sex Hormones and Breast Density in Young Women- J.Dorgan	7 R03 CA167764-02- NCI	9/12/13-1/31/15	\$59,230
Implementation of evidence-based cancer early detection in Black churches- C. Holt	3 R01 CA147313-03S1- NCI	7/1/13-2/28/14	\$98,950
Longitudinal Study of Religion and Cancer-Related Behaviors in Black Americans- C. Holt	3 R01 CA154419-03S1- NCI	8/1/13-7/31/14	\$60,932
Implementation of evidence-based cancer early detection in Black churches- C. Holt	5 R01 CA147313-02- NCI	9/1/11-8/31/16	\$476,695

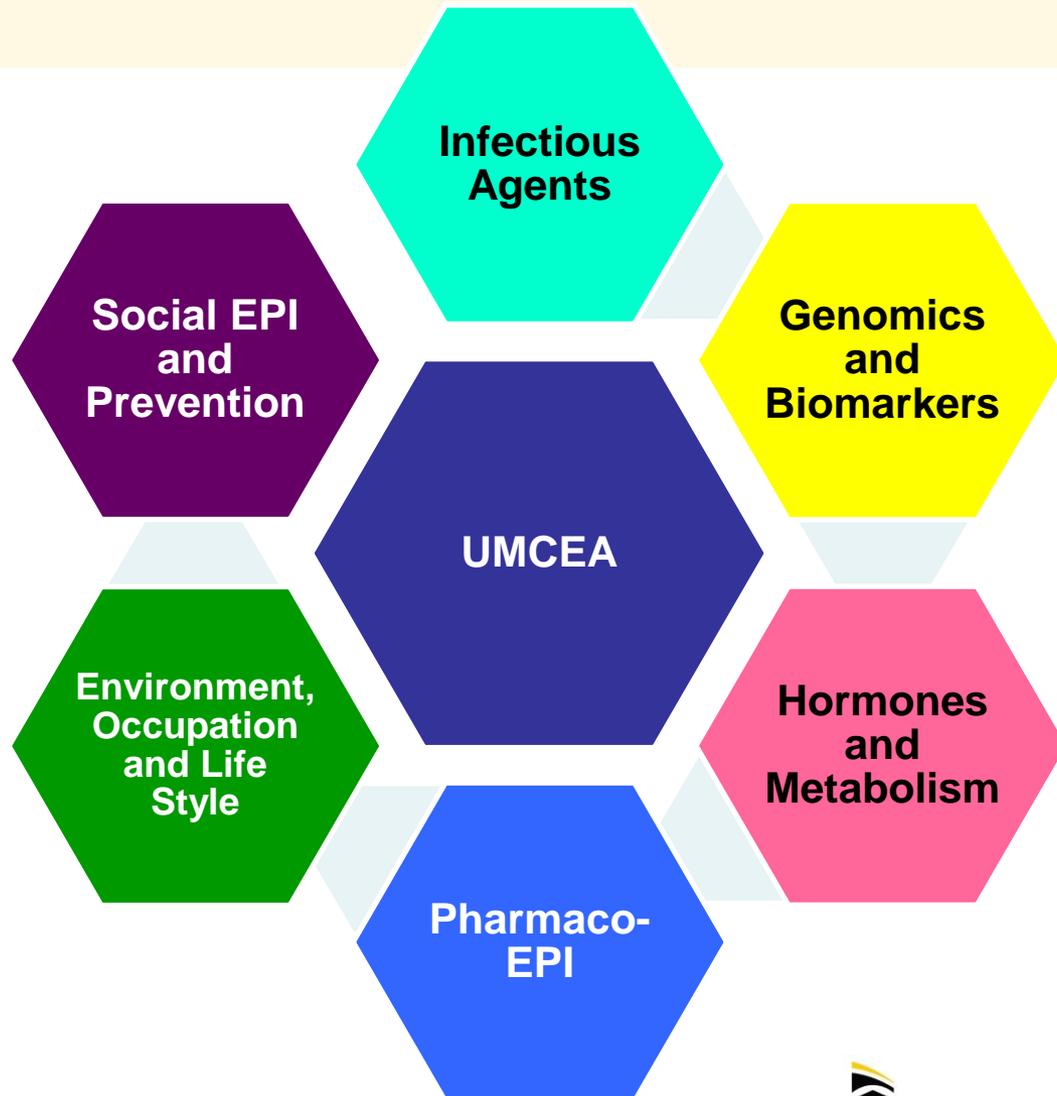
# Hormone Responsive Cancers: Active Grants

Title	Number	Grant Period	Total Budget
Longitudinal study of religion and cancer-related behaviors in Black Americans- C.Holt	5 R01 CA154419-02- NCI	9/14/11-7/31/16	\$460,756
Prostate Cancer Education in African American Churches- C. Holt	RSGT-10-113-01 (CPPB)	7/1/10-6/30/14	\$406,000
Plasticity of Mammary Adipose and Breast Cancer Development-L. Jones	1R21CA167268- 01-NCI	9/24/12-8/31/14	\$200,318
Behavioral Intervention to Reduce Breast Cancer Disparity in Underserved Koreans-S. Lee	1 R21 CA178471-01- NCI	9/13/13-8/31/15	\$198,360
Value of Information: The Contribution of the PSA Screening Test to Prostate Cancer Diagnosis- E. Reese	Agmt signed 7/1/12	7/1/12-6/30/13	\$25,000
Maryland's Organized Research Effort in Women's Health (MORE-WH)-P. Langenberg HRC	2 K12 HD043489-11- NICHD	8/1/12-7/31/17	\$493,499

# Viral Oncology: Active Grants

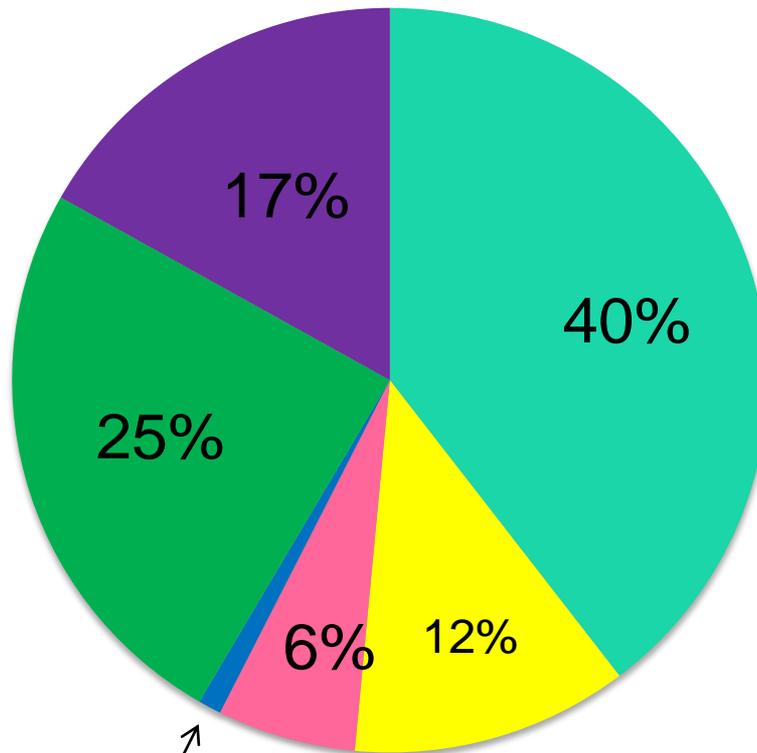
Title	Number	Grant Period	Total Budget
Rapid Response Characterization of New and Manipulated Tobacco Products-P. Clark	1 P50 CA180523-01-NCI	9/18/13-8/31/18	\$3,486,560
Trust-W. Blattner	1 R01 MH099001-01- NIMH	9/18/12-7/31/15	\$967,623
IHV UMB AITRP in Nigeria- W. Blattner	D43 TW001041-13-NIH	9/30/98-9/29/15	\$595,407
AIDS Care and Treatment in Nigeria Plus (ACTION PLUS)- W. Blattner	Agmt dated 9/30/11-IHV-Nigeria	9/30/11-9/29/13	\$1,802,868
Capacity Development for Research into AIDS Associated malignancies (CADRE)- C. Adebamowo	3 D43 CA153792-03S1-NCI	9/7/10-8/31/14	\$246,840
Capacity Development for Research into AIDS Associated malignancies (CADRE) - C. Adebamowo	5 D43 CA153792-03-NCI	9/7/10-8/31/13	\$470,746
African Collaborative Center for Microbiome and Genomics Research (ACCME) – C Adebamowo	1 U54 HG006947-01-A1 NHGRI	9/01/13-6/30/17	\$4,250,000

# UMCEA Research Clusters



# Distribution of Funding by Cluster

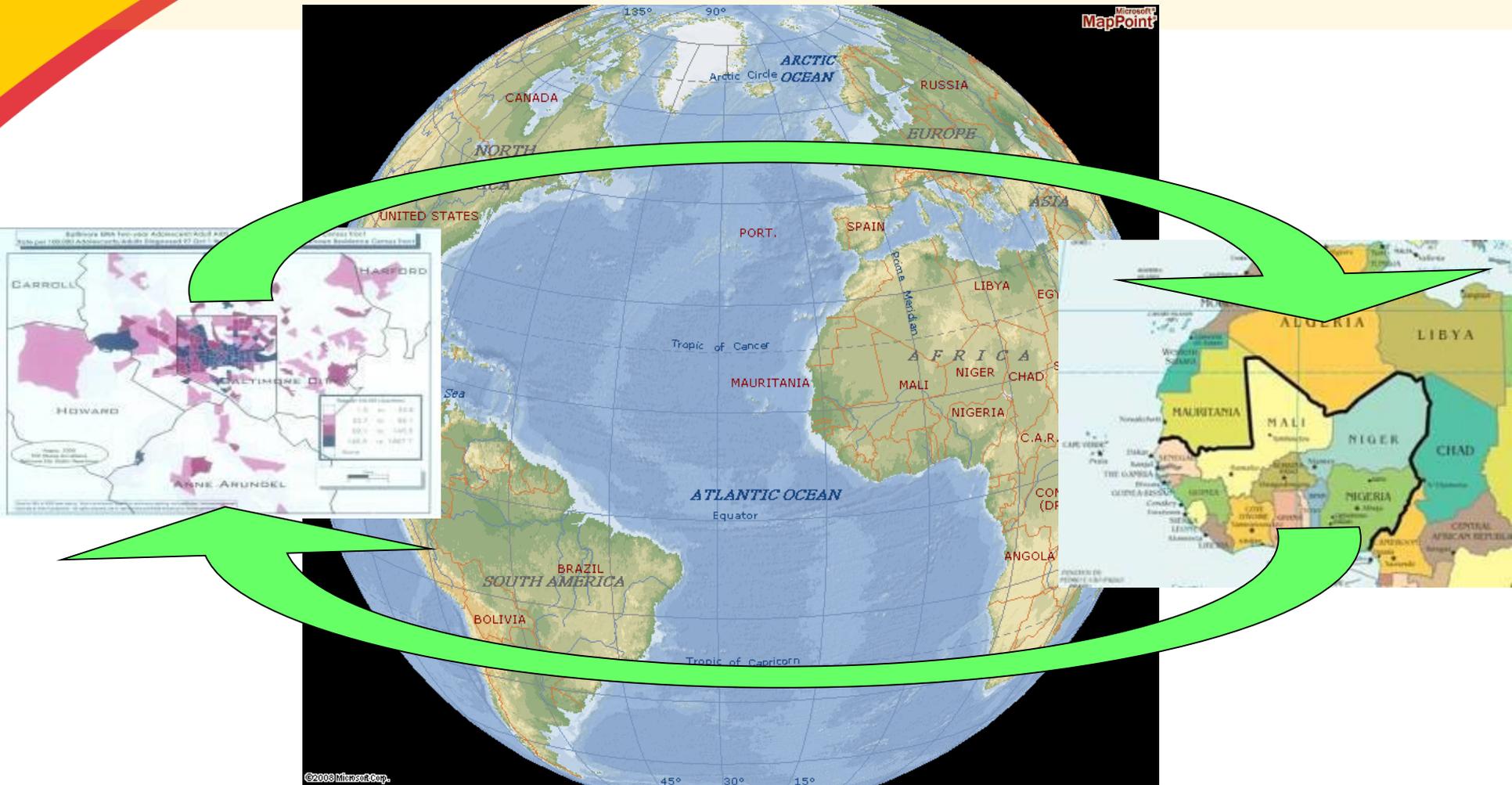
## Percentage of Grants



- Infectious Agents
- Genomics & Biomarkers
- Hormones & Metabolism
- Pharmaco-Epi
- Envt, Occupation & Life
- Social Epi & Prevention

**Total \$20,972,875**

# West Baltimore to West Africa Cancer Research Framework: Targeting Health Disparities



# ACCME: African Collaborative Center for Microbiome and Genomic Research, Abuja, Nigeria

## ACCME Resources

- PyroMark Q24 Advanced Pyrosequencer
  - For viral and host genome sequencing and epigenomics studies
- Bio-Rad MagPix
  - For cytokines analysis
- MagnaPure LC 2.0
  - Robotic DNA and RNA extraction
- Roche Lightcycler 480
  - For qPCR
- Sequenom Mass Array
  - For MALDI-TOF
- Illumina MiSeq
  - For next generation sequencing
- Roche Cobas 8000
  - High throughput biochemistry



CANCER EPIDEMIOLOGY ALLIANCE (UMCEA)



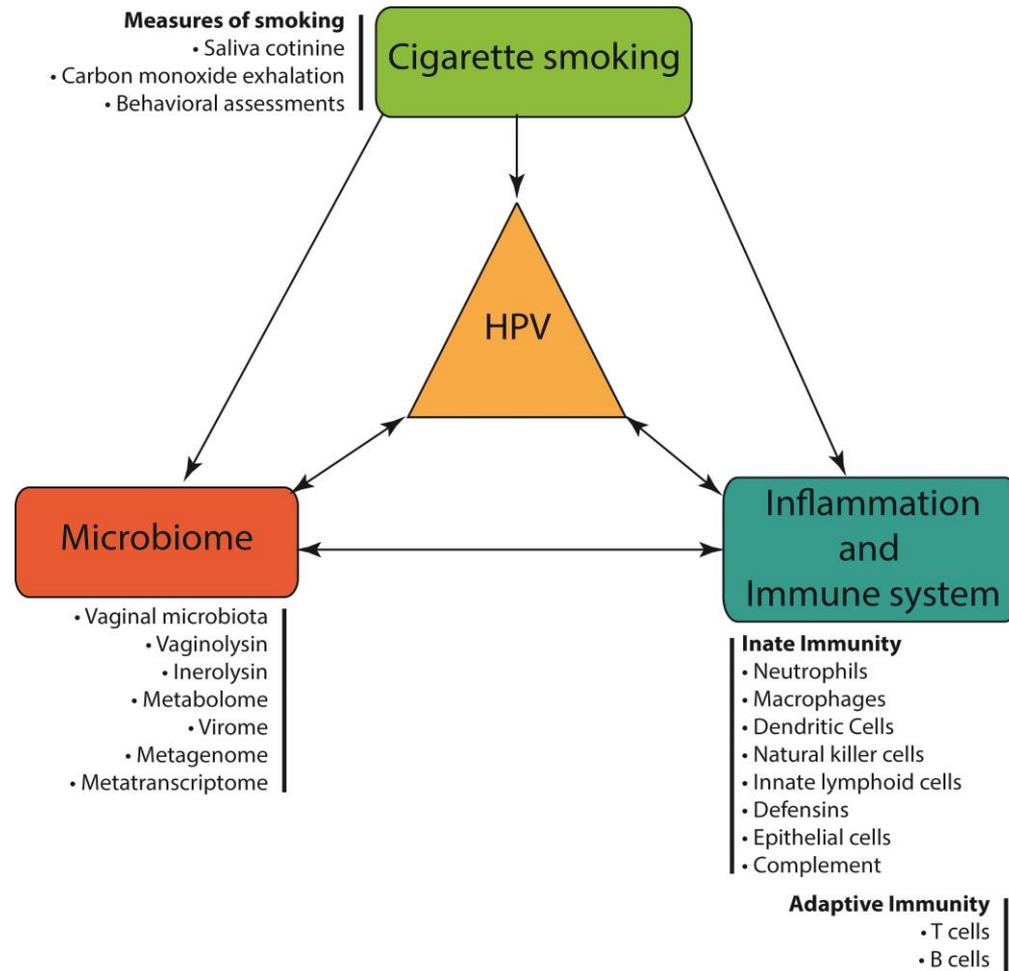
## H3 Africa ACCME Biorepository



- ACCME funded by the NIH and Wellcome Trust through H3 Africa (Human Heredity for Health in Africa) Network - PI Clement Adebamowo
- Grant to IHV-Nigeria for first genomics, microbiome and epigenomics research laboratory in Sub-Saharan Africa

# Future Plans and Projects - HPV

- HPV and Cancer -ACCME  
Project Nigeria - Adebamowo
- Microbiome-HPV – Baltimore  
– Brotman
- HPV in MSM – Nowak
- HPV Persistence - Rositch
  - Similarities in microbiome pattern between Baltimore African Americans and Nigeria
  - GWAS association for HPV in Nigeria similar to that in US



# Future Plans and Projects – Hormonal Cancers

- Two genes linked to the Anti-mullerian Hormone Receptor (AMHR2) significantly associated with breast cancer risk in African American women – Nan, Dorgan
- Nigerian Integrative Epidemiology of Breast Cancer Study involving 1,000 breast cancer cases, 2,000 controls being developed – Adebamowo
- Breast Cancer and adiposity – Jones
- PSA and Prostate Cancer Diagnosis – E. Reese

## SNPs significantly associated with breast cancer risk

SNP (gene)	Age-adjusted OR	
	Whites	Blacks
rs17695156 (AMHR2)	N=Ca 346/ Ct 701	N= Ca 149/ Ct 264
CC	1.00	1.00
CT	1.00 (0.68-1.45)	4.59 (1.16-18.1)
TT	1.99 (0.49-8.04)	3.96 (0.35-44.4)
Additive OR	1.07 (0.77-1.50)	<b>3.02 (1.13-8.04)</b>
p for trend	0.69	0.03
rs2002555 (AMHR2)		
CC	1.00	1.00
CT	0.88 (0.64-1.20)	1.32 (0.81-2.13)
TT	1.73 (0.88-3.41)	13.4 (1.62-110)
Additive OR	1.05 (0.82-1.34)	<b>1.67 (1.11-2.52)</b>
p for trend	0.70	0.01

Nan H, Dorgan, J et al (2013) Preliminary results